LISTING OF CLAIMS

1. (previously amended) In a network device configured by a configuration command, a method for automatically re-constructing said configuration command based on data stored in a configuration database during parsing and processing of the configuration command by the network device, the method comprising the steps of:

creating and storing a linear command regeneration template that includes at least one linear node template in a memory, each linear node template corresponding to a command element in said configuration command; and

regenerating said configuration command based on said linear command regeneration template and based on data from the configuration database.

2. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:

storing a begin option node template in said at least one linear node template.

3. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:

storing a next option node template in said at least one linear node template.

4. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:

storing an end option node template in said at least one linear node template.

5. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:

storing a begin option node template, a next option node template, and an end option node template in said at least one linear node template.

6. (previously amended) The method of Claim 1 wherein the step of regenerating said configuration command further comprises the step of:

filtering said linear command regeneration template to locate at least one linear node template.

7. (previously amended) The method of Claim 1 wherein the step of regenerating said configuration command further comprises the step of:

scanning the linear command regeneration template to find a begin option node template, said begin option node template including an identification.

8. (Cancelled)

9. (previously amended) The method of Claim 7, wherein the step of regenerating said configuration command further comprises the steps of:

scanning the linear command regeneration template to find an end option node template that includes said identification of the begin option node template.

10. (previously amended) The method of Claim 6 wherein the step of regenerating said configuration command further comprises the step of:

passing said filtered linear node template from the linear command regeneration template to an evaluate branches process.

11. (previously amended) The method of Claim 10 further comprising the step of:

evaluating at least one branch in said filtered linear node template from the linear command regeneration template by said evaluate branches process.

12. (previously amended) The method of Claim 10 further comprising the step of:

finding a branch in said filtered linear node template.

13. (previously amended) The method of Claim 12, further comprising the step of:

validating said branch based on data from said configuration database.

14. (currently amended) A computer-readable medium carrying one or more sequences of instructions for automatically re-constructing a network device configuration command that was used to configure a network device based on data stored in a configuration database,

wherein parsing and processing of the configuration command by the network device resulted in storage of data in the configuration database, and wherein execution of the sequences of instructions by one or more processors causes said one more processors to carry out the steps of:

creating and storing a linear command regeneration template that includes at least one linear node template in a memory, each linear node template corresponding to a command element in said configuration command; and

regenerating said configuration command based on said linear command regeneration template and based ~~one~~ on data from the configuration database.

15. (previously amended) The medium of Claim 14 wherein said one or more sequences of instructions for creating and storing a linear command regeneration template further comprises one or more sequences of instructions for:

storing a begin option node template in said at least one linear node template.

16. (previously amended) The medium of Claim 14 wherein said one or more sequences of instructions for creating and storing a linear command regeneration template further comprises one or more sequences of instructions for:

storing a next option node template in said at least one linear node template.

17. (previously amended) The medium of Claim 14 wherein said one or more sequences of instructions for creating and storing a linear command regeneration template further comprises one or more sequences of instructions for:

storing an end option node template in said at least one linear node template.

18. (currently amended) The medium of Claim 14 wherein said one or more sequences of instructions for creating and storing a linear command regeneration template further comprises one or more sequences of instructions for:

storing a begin option node template, a next option node template, and an end option node template in said at least one linear node template.

19. (previously amended) The medium of Claim 14 wherein said one or more sequences of instructions for regenerating said configuration command further comprises one or more sequences of instructions for:

filtering said linear command regeneration template to locate at least one linear node template.

20. (previously amended) The medium of Claim 14 wherein said one or more sequences of instructions for regenerating said configuration command further comprises one or more sequences of instructions for:

scanning the linear command regeneration template to find a begin option node template, said begin option node template including an identification.

21. (cancelled)

22. (previously amended) The medium of Claim 20, wherein said one or more sequences of instructions for regenerating said configuration command further comprises one or more sequences of instructions for:

scanning the linear command regeneration template to find an end option node template that includes said identification of the begin option node template.

23. (previously amended) The medium of Claim 19 wherein the one or more sequences of instructions for regenerating said configuration command further comprises one or more sequences of instructions for:

passing said filtered linear node template from the linear command regeneration template to an evaluate branches process.

24. (previously amended) The medium of Claim 23 further comprising one or more sequences of instructions for:

evaluating at least one branch in said filtered linear node template from the linear command regeneration template by said evaluate branches process.

25. (previously amended) The medium of Claim 23 further comprising one or more sequences of instructions for:

finding a branch in said filtered linear node template.

26. (currently amended) The medium of Claim 25 further comprising one or more sequences of instructions for:

validating said branch based ~~one~~ on data from said configuration database.

27-39 (cancelled)

40. (previously amended) In a network device configured by a configuration command, an apparatus for automatically re-constructing said configuration command based on data stored in a configuration database during parsing and processing of the configuration command by the network device, the apparatus comprising:

means for creating and storing a linear command regeneration template that includes at least one linear node template in a memory, each linear node template corresponding to a command element in said configuration command; and

means for regenerating said configuration command based on said linear command regeneration template and based on data from the configuration database.

41. (previously amended) The apparatus of Claim 40 wherein said means for creating and storing a linear command regeneration template further comprises:

means for storing a begin option node template in said at least one linear node template.

42. (previously amended) The apparatus of Claim 40 wherein said means for creating and storing a linear command regeneration template further comprises:

means for storing a next option node template in said at least one linear node template.

43. (previously amended) The apparatus of Claim 40 wherein said means for creating and storing a linear command regeneration template further comprises:

means for storing an end option node template in said at least one linear node template.

44. (previously amended) The apparatus of Claim 40 wherein said means for creating and storing a linear command regeneration template further comprises:

means for storing a begin option node template, a next option node template, and an end option node template in said at least one linear node template.

45. (previously amended) The apparatus of Claim 40 wherein said means for regenerating said configuration command further comprises:

means for filtering said linear command regeneration template to locate at least one linear node template.

46. (previously amended) The apparatus of Claim 45 wherein said means for filtering said linear command regeneration template to locate comprises:

means for scanning said linear command regeneration template to find a begin option node template, said begin option node template including an identification.

47. (currently amended) A method of automatically re-constructing a network device configuration command based on configuration data stored in the network device, wherein parsing and processing of the configuration command resulted in storage of the configuration data, wherein the command comprises at least one command element that can have a plurality of values, the method comprising the computer-implemented steps of:

creating and storing at least one linear node in a parse tree for representing said at least one command element, wherein said linear node comprises a begin option node having a single entrance; a next option node coupled to said ~~being~~ begin option node having a single entrance; and an end option node coupled to said ~~being~~ begin option node wherein said end option node has a single exit;

creating and storing a linear command regeneration template in a memory, wherein the linear command regeneration template comprises information identifying how to regenerate a configuration command; and

regenerating the command based on the linear command regeneration template and based on data from said configuration data stored in the network device.

48. (previously presented) The method of Claim 47, wherein creating and storing at least one linear node further comprises connecting a plurality of branches to said begin option node.

49. (previously presented) The method of claim 48 wherein each branch in said plurality of branches represents a different value of said at least one command element.

50. (previously presented) The method of claim 48, wherein each branch is associated with a next option node.

51. (previously presented) The method of claim 47, wherein said parse tree further comprises a binary node.

52. (currently amended) The method of claim 47, wherein said command includes another command element that can have a plurality of values, said method further comprising representing said another command element by another linear node in said parse tree wherein said another linear node comprises a second ~~being~~ begin option node having a single entrance connected to said exit of said end option node, a second next option node coupled to said another begin option node, and a second end option node coupled to said another begin option node wherein said another end option node has a single exit.

53. (previously presented) A method of automatically regenerating a network device configuration command based on configuration data stored in the network device, wherein parsing and processing of the configuration command resulted in storage of the configuration data, the method comprising the computer-implemented steps of:

creating and storing a linear command regeneration template including a linear node template, wherein the linear node template comprises a begin option node template, a next option node template, and an end option node template;

regenerating the configuration command based on the linear command regeneration template and based on data from a database, by:

scanning the linear command regeneration template to find an end option node template that includes an identification of the begin option node template;

passing the linear node template from the linear command regeneration template to an evaluate branches process;

evaluating at least one branch in the linear node template from the linear command regeneration template by the evaluate branches process;

finding a branch in the linear node template; and

validating the branch using the configuration data stored in the network device.